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## CIRAS News (Vol. 49, No. 2)

Iowa State University Center for Industrial Research and Service

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## AT A GLANCE

### Walsh Door & Hardware Co.

**LOCATION:** Headquartered in Des Moines, branch facility in Iowa City

**FOUNDED:** 1866 as L. H. Kurtz Co.

**EMPLOYEES:** 58

**IMPACT:** More than \$1.8M increased sales and ten new jobs have been created in the past year.

**OVERVIEW:** Walsh Door & Hardware Co. provides high-quality doors, frames, hardware, access control, and video surveillance solutions to customers throughout the state of Iowa.

# Collaboration Helps Walsh Door & Hardware Co. Create New Jobs, Add \$1.8M in Sales

*In 2010, as many companies were struggling with the economic recession, Walsh Door & Hardware Co. in Des Moines, Iowa, was looking to invest in the company and its people. In particular, the company wanted to revamp its manufacturing plant. It also wanted to do strategic planning for the future. That same year, Derek Thompson, a CIRAS account manager, stopped to call on the company. His timing couldn't have been more perfect.*

"We were looking to do something different," says Brady Warrick, vice president of finance and operations at Walsh Door & Hardware Co. Thompson informed Warrick about the services CIRAS offers, including flow and process mapping. The collaboration between CIRAS and Walsh Door & Hardware Co. began.

Four years later, the company is seeing the results of its employees' hard work and its collaboration with CIRAS. In the last year alone, the company's sales have increased by more

than 15 percent and the company has created ten new jobs.

"We've seen a lot of growth as a company since we started working with CIRAS," Warrick says.

### Planning for the future

CIRAS initially assisted Walsh Door & Hardware Co. with a project that looked at process flow, optimizing its plant layout, and dealing with the theory of constraints. More recently, CIRAS worked with the company on strategic planning.

*Continued on page 2*

- 1 Collaboration Helps Walsh Door & Hardware Co. Create New Jobs, Add \$1.8M in Sales
- 4 CIRAS Leads Ossian Inc. to Iowa State Lab for Research on New Deicing Product
- 5 TWI Helps World Class Industries Increase Sales by \$2M and Reduce Defect Rate by 50%
- 6 Engineering Co-ops and Internships
- 7 Students Make Engineering Career Fair a Success
- 7 CIRAS Connections
- 7 Announcing Office of Economic Development and Industry Relations
- 8 State of the State
- 9 Candace Drahn of M's Machine and Manufacturing Honored with STEP Award
- 9 GOVTALK—B2G Sales
- 10 \$389 Million Impact—CIRAS Fiscal Year 2013 Results
- 10 Staff News
- 11 ISU Lab Overview
- 11 Made in Iowa
- 12 CIRAS Assists Iowa Lean Consortium in Reaching Iowa Manufacturers
- 13 Internet Marketing Strategy Boot Camps Help Businesses Get Results
- 14 Noteworthy
- 14 Upcoming Events
- 15 Contact Information
- 16 The Innovation Cycle

**On the Cover:** Walsh Door & Hardware Co. is a one-stop shop for customers' door, frame, hardware, access control, and video surveillance needs, including any service required on those products.

**CIRAS Mission:** Every day we will enhance the performance of industry through applied research, education, and technical assistance.

CIRAS is supported in part by the DoC/NIST Manufacturing Extension Partnership, the DoD/DLA Procurement Technical Assistance Program, and the DoC/EDA University Center Program.

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"We helped Walsh Door & Hardware Co. write a transformation plan that included where they want to be in a certain number of years and helped map out what needs to happen, where they need to grow, and what roadblocks might interfere with getting them where they want to be," Thompson says.

Warrick attributes much of the company's recent success to having this road map.

Additionally, CIRAS connected the company with the Iowa Small Business Development Center (SBDC), an outreach program of Iowa State University's College of Business. An SBDC data analyst

performed market research to help identify demographic data for various parts of Iowa and other states so the company could consider new markets,



Walsh Door & Hardware Co. is head-quartered in Des Moines (shown above), and also has a facility in Iowa City.

segment its customers to decide on the best approach to grow the company, and provide customer data so the company could better serve clients.

The market research helped the company make decisions about its growth. "It helped us avoid some bad decisions of moving into different markets, and it made us realize that we needed to focus on saturating the current markets we are serving before

we look to expand geographically," Warrick says.

Warrick also says CIRAS' assistance with developing a vision for the company's future was extremely valuable.

"It's so easy to get caught up in the day-to-day operations of running the business and not think about five or ten years down the road. You have to stay committed to discussing the strategic plan on a regular basis and stay committed to executing the plan," he says.

## Positioned for growth

Walsh Door & Hardware Co. is a fifth-generation family-owned Iowa company. The company, originally established as a wholesale hardware and sporting goods company, has changed over the years.

Today a growing percentage of the company's business is its electronic security access control and video surveillance division, which began more than seven years ago. This division is uniquely positioning the company to remain financially sound and continue to grow. Warrick says CIRAS' and SBDC's market research helped the company to understand customer needs in this area and different market segments so that it could better target customers.

*"You have to stay committed to discussing the strategic plan on a regular basis and stay committed to executing the plan."*

*—Brady Warrick*

"We're the only company in the state who not only provide door, frame, and hardware solutions, but also provide access control and video surveillance solutions," says Marty Walsh, president of Walsh Door & Hardware Co. "This differentiates us from our competitors." In fact, only a few other companies in the Midwest offer similar solutions, he says.



Warrick says that providing both the door and hardware and electronic security products and services benefits the customer because if they have an issue with a product, they only need to make one call, instead of two calls to two different companies. It also eliminates finger pointing if issues arise and allows Walsh Door & Hardware Co. to respond to customer needs and solve problems quickly.

For example, schools have always been part of the company's market for door, frame, and hardware products. Since the addition of its electronic security division, Walsh Door & Hardware Co. has been providing access control and surveillance products to K-12 schools, universities, hospitals, and office complexes. This expanded product line helps the company address its customers' increasing safety concerns.

#### Benefits of CIRAS services

Both Walsh and Warrick say they appreciate the help CIRAS has provided to the company over the last few years, including helping connect the company to Iowa State University experts in multiple areas.

"Many of the CIRAS staff have private industry experience before joining CIRAS, so they understand the private sector and can give good advice. They've walked in our shoes. That has been helpful and gives credence when they give advice," Warrick says.



Walsh Door & Hardware Co. manufactures metal doors and frames (inset), among other products, for K-12 schools, universities, hospitals, and office complexes. Since it began working with CIRAS in April 2010, the company has continued to grow and has hired twenty new employees.

The CIRAS staff has a vast industry background and comes from a wide variety of expertise areas within the private sector including plant managers, R&D managers, government contracting specialists, and more. If CIRAS doesn't have the expertise, it taps into other Iowa State University resources,

particularly within the College of Engineering and College of Business.

Today, Walsh Door & Hardware Co. continues to grow and create jobs that provide benefits to employees. CIRAS continues to help the company improve its business through coaching and technical assistance.

➤ For more information, contact Derek Thompson at 515-419-2163 or [thompson@iastate.edu](mailto:thompson@iastate.edu).



# CIRAS Leads Ossian Inc. to Iowa State Lab for Research on New Deicing Product

*An innovative new concrete deicer is one step closer to reality because officials at Davenport-based Ossian Inc. sought help from CIRAS to bring their new product to market.*

Mike Ossian, director of operations at Ossian Inc., said his company learned a lot from CIRAS-arranged product testing for Season One—a revolutionary deicing product the company designed for use on new concrete. New concrete is a multibillion-dollar industry, but no deicing product is currently safe for concrete during its first year because of the concrete's vulnerability to freeze/thaw during the curing process.

"Our own observations showed we were on the right track, but the test results from the lab far exceeded our expectations," Ossian says.

According to the tests, Season One outperformed salt solutions—during freeze/thaw cycles it did not reduce concrete strength nor did it cause surface scaling.

"If the test results had come out differently, the project would be dead," Ossian says. "We are still spending money in Iowa on this product because of CIRAS and the successful test results. Now we know we have a viable product."

Season One, a biobased and biodegradable deicer, originally was developed and tested in Ossian's own lab. But the company wanted to take the product to the next step, so it began searching for a research lab with expertise in concrete that could analyze the product's impact on concrete, its skid resistance, and its proprietary sealing effect.

Ossian discovered that Iowa State University has one of the top concrete

research facilities in the country, the Institute for Transportation (InTrans) National Concrete Pavement Technology Center (NCPTC). Ossian turned to its CIRAS account manager to connect with the center's director and researchers.

"Iowa State has a lot of hidden gems for resources that people may not know about, and CIRAS can help find resources that really fit with a company and its efforts," says John Roberts, CIRAS project manager.

CIRAS arranged for meetings between Ossian and Iowa State researchers, which led to developing a research project proposal. Fatih Bektas, a research assistant professor with InTrans NCPTC, completed the research and analysis on Ossian's new product in spring 2013.

*"Iowa State has a lot of hidden gems for resources that people may not know about, and CIRAS can help find resources that really fit with a company and its efforts."*

*— John Roberts*

This winter Ossian is working with select facilities that will try different methods and rates of application. The company plans to release Season One, which it says is the first deicing product that can be used without

## AT A GLANCE

### Ossian Inc.

**LOCATION:** Davenport, Iowa (headquarters); Walcott, Iowa (processing facility)

**FOUNDED:** 1974

**EMPLOYEES:** 10

**IMPACT:** Successful test results at an Iowa State lab exceeded Ossian's expectations. The company plans to test the product with select facilities this winter and release it in winter 2014–2015, potentially attracting new customers and new sales.

**OVERVIEW:** Ossian Inc. focuses entirely on deicing technology and reducing the impact of deicers on the environment. The company offers a range of liquid and granular deicers for sidewalk and highway use to customers worldwide.

damaging concrete in its first year, in the winter of 2014–2015. The release of the new product has significant potential to attract new customers and new sales.

Because Ossian is a small company, the support and resources it receives from CIRAS are important. The company plans to continue working with CIRAS on future projects.

"We find CIRAS to be an invaluable manufacturing research resource in the state of Iowa," Ossian says. "We are a small company with a wide reach but limited manpower resources. We can access a tremendous amount of talent in the state through CIRAS."



Ossian, Inc., a deicing technology company, is headquartered in Davenport, Iowa.

➤ For more information, contact John Roberts at 515-294-0932 or [jarobert@iastate.edu](mailto:jarobert@iastate.edu).



## AT A GLANCE

### World Class Industries (WCI)

**LOCATION:** Hiawatha, Iowa, with plants in Cedar Falls, Des Moines, East Moline, and Germany

**FOUNDED:** 1953

**EMPLOYEES:** 90

**IMPACT:** Increase sales by \$2M and reduced defect rate by 50%

**ANNUAL SALES:** \$180M in annual sales

**OVERVIEW:** WCI provides a full range of supply chain services from assembling parts/products to handling the logistics of order fulfillment to coordinating acquisition of supplies nationally and internationally. The customer base includes original equipment manufacturers throughout the Midwest.

# TWI Helps World Class Industries Increase Sales by \$2M and Reduce Defect Rate by 50%

*World Class Industries (WCI), with headquarters in Hiawatha, Iowa, is in the business of helping manufacturers address supply chain problems with innovative and cost-effective solutions.*

One of these solutions is serving as an outsource for assembly of parts/products. The company also offers kitting services that consolidate ordering, storing, handling, and packaging of service parts and components; development of customized software that organizes the logistics of order fulfillment; and coordination of product sourcing both nationally and internationally.

Today WCI has grown to \$180M in annual sales, according to Brent Cobb, WCI president. The company has production and storage facilities in five locations—Hiawatha, Cedar Falls, and Des Moines, Iowa; East Moline, Illinois; and Kaiserslautern-Siegelbach, Germany.

CIRAS account manager Sean Galleger describes WCI as a well-run company that has taken advantage of CIRAS programs to help it continually improve and build on that success. "It is a challenge every day to grow and change," Cobb says. "CIRAS has been a great resource for us for training and networking."

In 2010 CIRAS project manager Jeff Mohr led WCI employees through the 10-hour Training Within Industry (TWI) job instruction module, and he continued with follow-up sessions.

"We found that each of our facilities was doing things a bit differently," Cobb says. "As a result, we had inconsistencies in how things were getting implemented. These sessions provided a good training baseline."

In the sessions, Mohr guided employees through a structured four-step process including breaking down jobs into important steps. Each step has key points and each key point has a reason for doing a task a specific way. The goal is to ensure that employees are trained to do a job the same way every time. Repetition and controlling the release of information are critical factors in successful job instruction, according to Mohr.

"Regardless of the shift or the location of the facility, the employees will have a common ground," Mohr points out.

Training Within Industry has also proven to be instrumental in successful implementation of WCI's advance quality planning process. The purpose is to assess the potential risks of a new project

and rate the impact of each risk so the company knows where attention should be focused.

To get the most out of this process, however, the product needs to be assembled the same way every time. Cobb credits TWI with helping the company establish the framework for standardized procedures, ensuring

consistency both by the people currently doing the job and by new employees who take over the tasks.

"We have been on a journey to reduce our defect rate, which is measured in parts per million," Cobb says.

"Implementing the job instruction methods from

"Implementing the job instruction methods from TWI has played an important role in helping us decrease our defect rate by 50 percent and increase sales by \$2 million."

— Brent Cobb

TWI has played an important role in helping us decrease our defect rate by 50 percent and increase sales by \$2 million."

Cobb also notes that involvement of all employees in finding better ways to do things is a key component in helping WCI continue to grow. The company is focused on getting participation of employees at all levels to be part of improvement teams.

➤ For more information, contact Sean Galleger at 515-290-0181 or [galleger@iastate.edu](mailto:galleger@iastate.edu).

# Engineering Co-ops and Internships by Brian Larson and Joely Swenson

*Cooperative education and internship experiences make an important contribution to the development of engineering talent at Iowa State University. The College of Engineering has had an experiential education program since 1955. It is an academic program controlled by the engineering faculty and administered by Engineering Career Services. Co-ops and internships are not required but are highly encouraged, and more than 70 percent of undergraduate students complete at least one professional work experience before graduation.*

## What are Co-ops and Internships?

Co-ops and internships are engineering work experiences that augment learning and accelerate the skill development of students. An internship is a single work-term at an employer and a co-op is multiple work-terms at the same employer. For co-ops, the work-terms alternate with academic study and the student's level of responsibility generally increases with each return to the workplace.

## Benefits to Students

Internships and co-ops are the bridge between classwork and the professional practice of engineering. Benefits include the following:

- Enhanced career exploration and clarification of career goals
- An understanding and appreciation of educational needs and objectives
- An improved ability to apply knowledge and make connections between theory and practice
- Opportunities to develop professional skills and habits
- Compensation that helps defray college expenses
- A stronger resume, professional networking opportunities, and possible full-time employment opportunities upon graduation

## Benefits to Employers

Employers benefit from these experiential education experiences as well:

- Engagement with emerging talent that may lead to filling full-time positions
- More informed full-time hiring decisions
- Higher full-time offer acceptance rates and reduced recruiting costs
- Reduction of training and higher productivity of entry-level hires

- Increased retention rates of new employees
- Creative energy and transfer of knowledge about state-of-the-art equipment and practices at the university
- Accomplishment of productive work

## Hiring an Intern

The college has worked to create a barrier-free program so as many students as possible can participate. Students do not pay tuition while on a co-op or internship, and they retain their full-time student status. Additionally, there are no fees charged to students or employers.

The process of hiring an intern involves the extra step of talking with Engineering Career Services to verify that engineering tasks and supervision will be provided to the student and that program expectations are understood. Once this exchange has occurred, the employer develops a job description, posts it on

CyHire (Iowa State's online job board for students), and identifies the student(s) that best meets their needs.

## Iowa Economic Development Funding

Funding is available to qualifying Iowa companies through the Iowa Economic Development Authority (IEDA). The IEDA's Iowa Student Program provides grants to small and medium-sized companies in the advanced manufacturing, biosciences, and information technology industries. Awards are available up to \$3,100 for any single internship or \$9,300 for any single business. For more information, please refer to the IEDA's fact sheet at [http://iowaeconomicdevelopment.com/userdocs/documents/ieda/Innov-Commer\\_Internship.pdf](http://iowaeconomicdevelopment.com/userdocs/documents/ieda/Innov-Commer_Internship.pdf).

**To explore the possibility of hosting an intern at your facility, please visit [www.engineering.iastate.edu/ecs](http://www.engineering.iastate.edu/ecs).**



Jake Schultes, junior in mechanical engineering (pictured here in an agricultural sprayer), interned at Hagie Manufacturing Co. in Clarion, Iowa. During his internship, Schultes worked on equipment that makes prototype parts and subsystems and installed them on test machines to ensure fit, function, and durability. He also collected and processed test data and reported his findings to the design engineers. *Photo courtesy of Hagie Manufacturing Co.*

➤ For more information, contact Joely Swenson at 515-294-9536 or [jswenson@iastate.edu](mailto:jswenson@iastate.edu).



## Students Make Engineering Career Fair a Success

*A record 5,703 students and near-record 323 employers attended Iowa State University's Engineering Career Fair last fall, resulting in more than 1,300 interviews within the three days following the event. To make this semiannual event a success, Engineering Career Services (ECS) staff relies on nearly 100 students to provide an excellent student experience and customer service to employers during the event.*

Each career fair has two student cochairers who manage the leaders of subcommittees on events, publicity, logistics, and personnel management. About 90 student ambassadors help with event-day operations.

Roger Bentley, ECS manager, says more than 900 tasks go into hosting the career fair, and the cochairers help manage the logistics to complete those tasks while also developing their leadership, decision-making, and other career skills.

"In only three years' time, it is possible for a student to go from handing out maps at one of the entrances to managing the entire event. You won't find this kind of rapid promotion in many other organizations or companies. It's an incredible learning experience," says Astrid Lederhaas, fall cochair and senior in industrial engineering.

Lederhaas and cochair Jarred Schubert, senior in mechanical engineering, say their responsibilities included hiring subcommittee members, training ambassadors, creating and implementing a new ambassador sign-up system, organizing an employer panel, holding weekly meetings with subcommittees, promoting the event in engineering classes, and giving a speech during the employer luncheon.

"It is easy to do work, but it is very hard to lead people to do work for your organization. This experience has given me the opportunity to become a better leader and to learn how to work with people," Schubert says.

Lederhaas says cochairing the career fair helped improve her communication and teamwork skills. "I learned that you have to be able to trust your team. If you don't believe in your team members, then you are not a winning team."

The spring Engineering Career Fair is February 11, 2014. Companies can contact Engineering Career Services at [ecs@iastate.edu](mailto:ecs@iastate.edu) to reserve a space.

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*"It is easy to do work, but it is very hard to lead people to do work for your organization. This experience has given me the opportunity to become a better leader and to learn how to work with people."*

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*— Jarred Schubert*

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*Brian Larson, director of Engineering Career Services (ECS) since 2011, is no stranger to CIRAS.*

*Before his current role, Larson spent 18 years at Iowa State University's Center for Nondestructive Evaluation (CNDE) and worked closely with CIRAS as the leader of an industrial outreach program.*



Prior to joining the CNDE, Larson spent nine years at McDonnell Douglas (now part of Boeing). He contributed to the design, development, and support of several commercial and military aircraft and also was a business unit manager.

Larson now heads an Iowa State University agency that each year coordinates two career fairs, delivers more than 50 career development presentations, hosts more than 5,000 on-campus interviews, and administers nearly 900 internships and co-ops.

"We want our students to have a lot of options so they can select the positions that are best for them," Larson says.

"Toward this objective, CIRAS has been very helpful in assisting Iowa employers to connect with Engineering Career Services."

Larson enjoys working with students. "I also enjoy interacting with employers, many of whom are Iowa State alumni," he says. "We want employers to have a great experience so they keep coming back to Iowa State and making positions available to our students."

## Announcing Office of Economic Development and Industry Relations

Iowa State University has reorganized economic development and company assistance programs under a single umbrella. Iowa State President Steven Leath announced in mid-January that the new Office of Economic Development and Industry Relations (EDIR) will make it easier "for our external partners to connect with the university's expertise and capabilities..."

CIRAS now reports to the new office and will continue to report to the College of Engineering.

Included in the EDIR are the Iowa State University Research Foundation, Office of Intellectual Property and Technology Transfer; Institute for Physical Research and Technology (IPRT) Company Assistance; Pappajohn Center for Entrepreneurship; and Small Business Development Center.

Details of the new structure are still being developed.



## Exploring Iowa's Competitive Position in Manufacturing: A Subsector Analysis *by Liesl Eathington*

In *CIRAS News*, Vol. 49, No. 1, we explored how Iowa's various manufacturing industries compare to other states on two productivity-related measures: average employee compensation per job and average gross operating surplus per job. That analysis revealed several manufacturing industries in which Iowa ranks among the bottom half of states on both measures. This follow-up article compares Iowa to groups of top-performing states in three of those selected subsectors to gain insights into Iowa's low rankings.

The analysis ultimately shows that Iowa's low-end scores may have at least part of their basis in the state's current mix of manufacturing jobs.

Table 1 identifies states with the highest combined rankings on compensation and gross operating surplus per job in the selected subsectors. Dollar amounts for these average payments to labor and capital inputs reveal wide gaps between Iowa and the comparison states.

Table 1. Performance of Comparison States

Subsector	Comparison States	Average Compensation and Gross Operating Surplus Per Job (\$)	
		Comparison States	Iowa
Fabricated Metals	Connecticut, Massachusetts, Ohio	109,100	71,800
Electrical Equipment and Appliances	Kentucky, Michigan, North Carolina	160,800	88,200
Transportation Equipment	Michigan, Texas, Washington	163,200	74,900

A logical first step in exploring those gaps is, "How do these states differ from Iowa in the types and values of goods they are producing?" Figures 1–3 investigate this question with analysis of the fabricated metals, electrical equipment and appliances, and transportation equipment subsectors.

Each circle in the charts represents an industry group within a particular manufacturing subsector. The size of the circle reflects the industry group's average per-job payments to labor and capital. The circle's placement along the x-axis shows Iowa's percentage of subsector jobs that come from that industry group. The y-axis measures the industry group's average employment percentage in the comparison states. The closer the circles are to the diagonal line, the more Iowa resembles the comparison states in their subsector composition.

Payments to labor and capital for the fabricated metals industry groups range from approximately \$70,000 per job for architectural and structural metals to nearly \$130,000 for forging and stamping. Electrical equipment and appliances industry groups vary from \$90,000 to \$150,000 in labor and capital payments per job. Within the transportation equipment

subsector, the motor vehicles industry group returns more than \$250,000 per job in labor and capital payments. Motor vehicle parts and motor vehicle bodies and trailers, which are Iowa's two largest industry groups within the subsector, have the lowest average payments to labor and capital per job at roughly \$70,000 and \$50,000, respectively.

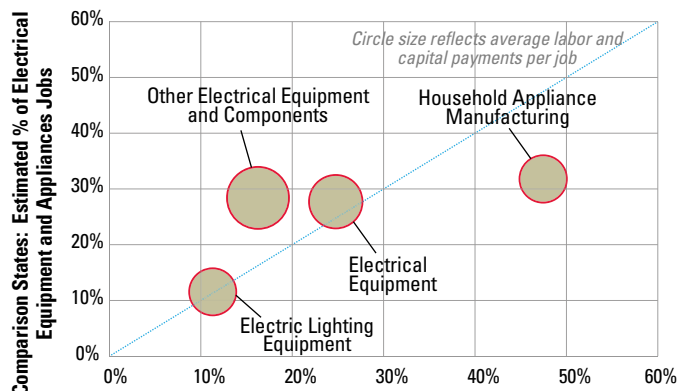


Figure 1. Electrical Equipment and Appliances Subsector Analysis

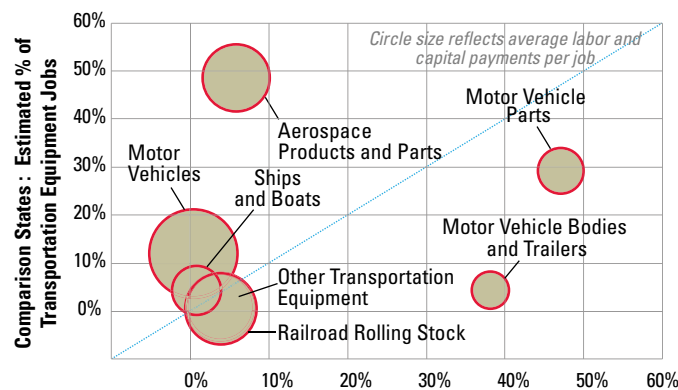


Figure 2. Transportation Equipment Manufacturing Subsector Analysis

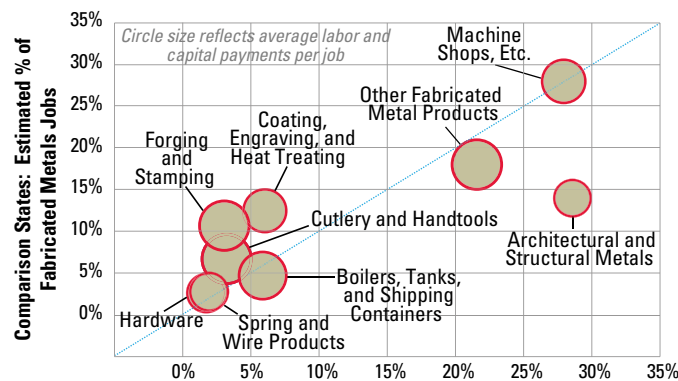


Figure 3. Fabricated Metals Subsector Analysis

A simple sensitivity analysis illustrates the potential effects of differences in employment composition by industry group. If we made the generous assumption that Iowa was achieving the national averages in labor and capital payments per job within each industry group, then simply changing our mix of employment to align with the comparison states could increase Iowa's average returns to workers and owners by the following amounts:

- 6 percent in fabricated metals
- 7 percent in electrical equipment and appliances
- 80 percent in transportation equipment

Of course, Iowa can't simply change its employment mix or achieve national average productivity characteristics at will. Furthermore, this hypothetical exercise suggests that industry mix only partially, and to varying degrees, explains the gaps in average returns to labor and capital by subsector. The factors behind Iowa's scores on competitive performance measures are more complex, as are the solutions for improving them.

➤ **For more information, contact Ron Cox at 515-294-0099 or [rcox@iastate.edu](mailto:rcox@iastate.edu).**

## Candace Drahn of M's Machine and Manufacturing Honored with STEP Award

*Candace Drahn, vice president of sales and marketing at M's Machine and Manufacturing Company Inc., is one of several Iowa women scheduled to be honored in February by The Manufacturing Institute with a Women in Manufacturing STEP (Science, Technology, Engineering, and Production) Award for her excellence and leadership skills. Drahn is one of 160 woman honorees from all levels of manufacturing, from the factory floor to the boardroom. (Other Iowa winners will be written about in future editions of CIRAS News.)*



At M's Machine and Manufacturing, an ISO-9001:2000-certified and a women-owned manufacturing business in Monona, Iowa, Drahn oversees strategic initiatives that improve company processes and support customer needs while increasing revenue and profitability.

"We are thrilled that Candace's contributions at M's Machine and Manufacturing were recognized by this important initiative at The Manufacturing Institute," says Sean Galleger, CIRAS account manager who nominated Drahn. "This STEP Award acknowledges her hard work, dedication, and constant pursuit of excellence in the critical field of manufacturing."

Continuous improvement is a key component of Drahn's business philosophy. M's Machine and Manufacturing has recently doubled its workforce and replaced dated plant equipment with new technology.

Jennifer McNelly, president of The Manufacturing Institute, said in a statement, "We chose to honor these women because they each made significant achievements in manufacturing through positive impact on their company and the industry as a whole."

### About the Manufacturing Institute

The Manufacturing Institute (the Institute) is the 501(c)(3) affiliate of the National Association of Manufacturers. As a nonpartisan organization, the Institute is committed to delivering leading-edge information and services to the nation's manufacturers. The Institute is the authority on the attraction, qualification, and development of world-class manufacturing talent.

**[www.themanufacturinginstitute.org](http://www.themanufacturinginstitute.org)**

## GOVTALK—B2G SALES

### Bid Match Service *by Julie Fagle*

One of the many benefits CIRAS offers their clients in the Procurement Technical Assistance Program (PTAP) is a bid match service. The bid match service allows businesses to receive government opportunity notifications (local, state, and federal) via e-mail that match their business profile.

A profile, developed by the client and a CIRAS government contracting specialist, identifies information that is specific to the client's business and includes data such as NAICS codes and keywords distinctive to their product/service and the demographic area where they are interested in pursuing government contracting opportunities. A client profile also captures which bid boards the client would like

to receive matches for (including local through international opportunities). Once the profile is established, the client will receive matches via e-mail any time an opportunity parallels their profile.

Using this type of service allows your business to save time and money, as you no longer need to navigate through hundreds of government websites and sift through the listings to find opportunities that are suitable to your business.

**If you are interested in learning more about PTAP and the bid matching service, contact Julie Fagle at 319-310-8612 or [jafagle@iastate.edu](mailto:jafagle@iastate.edu).**

## \$389 Million Impact— CIRAS Fiscal Year 2013 Results

The Iowa State University Extension and Outreach Center for Industrial Research and Service (CIRAS) helps companies prosper and grow. The CIRAS mission is to improve the quality of life in Iowa by enhancing the performance of industry through applied research, education, and technical assistance. CIRAS has been working with companies in communities across Iowa for 50 years and has a vision for Iowa of healthy communities through business prosperity.

CIRAS staff has expertise in engineering, innovation, government contracting, productivity, management practices, safety, supply chain management, sustainability, quality management, and community-business economic development.

In 2013, 1,613 businesses from 97 counties in the state received assistance on projects or attended educational workshops from CIRAS staff or partners. Companies responding to surveys reported \$389 million in total impact:

- \$333 million in sales gained or retained
- \$35 million in new investments
- \$21 million in costs saved or avoided
- 5,638 jobs added or retained

Cumulatively, over the past five years, CIRAS and partners have reported impact from companies totaling more than \$1.8 billion (sales gained or retained—\$1.5 billion; new investments—\$227 million; costs saved or avoided—\$100 million), with 25,675 jobs added or retained as a result of the assistance they received.

The center is supported in part by the DoC/NIST Hollings Manufacturing Extension Partnership, the DoD/DLA Procurement Technical Assistance Program, and the DoC/EDA University Center Program.



### Jeff Eckhoff—Communications Manager

Jeff Eckhoff joined CIRAS at the end of 2013 as communications manager after a long career in newspaper journalism. A graduate of the University of Missouri—Columbia School of Journalism, he worked at the *Columbia (Mo.) Daily Tribune*, *Central Penn Business Journal*, and the *Philadelphia Inquirer* before spending the past 17 years at *The Des Moines Register*. Jeff's two decades of journalistic experience have included coverage of manufacturing and retail

businesses, Des Moines and Polk County governments, the Iowa Supreme Court, and other legal proceedings at various county, state, and federal courthouses. His CIRAS responsibilities include marketing and economic development-related communications.



### Pamela Russenberger—PTAP Director

Pamela Russenberger has been named director of the Procurement Technical Assistance Program (PTAP), which helps Iowa businesses understand the market potential of government procurement, reduces barriers inherent in government contracting, and assists existing government contractors with market expansion at the federal, state, and local levels. Russenberger began her employment with CIRAS in 2012 as a government contracting specialist. Previously she spent nine

years in the aerospace and defense industry. Her experience includes contract management, financial management, master planning, proposal preparation, and data analysis with a focus on the pursuit and execution of government contracts. Russenberger holds an MBA with a concentration in change management from the University of Colorado and a bachelor's degree in political science from Minnesota State University in Mankato.



### Shankar Srinivasan—EDA University Center Program Director

Shankar Srinivasan has been named program director for the new CIRAS Advanced Manufacturing Innovation Network. The network is being established through a \$1,250,000 grant awarded to Iowa State University over five years by the U.S. Economic Development Administration's (EDA) University Center Program (UCP).

Srinivasan joined CIRAS as a project manager in 2011 after earning his PhD in biorenewable resources and technology at Iowa State. Prior to pursuing his graduate studies, he was an executive officer at Morarjee textiles in the Indian manufacturing industry where he worked on process and productivity improvement. As the EDAUCP director, Srinivasan's focus is to apply research-based methods to create an idea incubator supporting technology commercialization and high-wage job growth for Iowa's advanced manufacturing industry.





## Rapid Manufacturing and Prototyping Laboratory (RMPL)

*The RMPL facility is used to develop new methods for rapid prototyping and rapid manufacturing for industrial applications. A major goal of the laboratory is to eliminate the pre-process engineering time and skill required to create a custom component. This entails fast and easy process planning, fixture planning, and setup planning for making single or multiple functional parts.*

### Example Applications

- Rapid machining technology for fully automated rapid manufacturing of spare parts
- Push-button machining without the cost and time associated with typical programming and associated setup costs
- Rapid manufacturing processes involving machining porous metals used in biomedical implants
- Rapid pattern manufacturing for metal casting
- Rapid machining of bone fragments for orthopedic trauma research
- Setup, process planning, fixturing, and machinability analysis software development

### For more information, contact

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*Look closer at Iowa's rolling landscape and you may be surprised to discover what is made in Iowa. You will find manufacturers producing goods ranging from transportation equipment and powered machinery to quilting machines and barbecue sauce. When you buy products manufactured in Iowa, more money stays in our local communities.*

### Fox River Mills



**Overview:** Fox River, America's oldest sock brand, makes technical performance outdoor, work, hunting, snow, military, everyday, and sport-durable socks for men, women, and children. Home of the Original Rockford Red Heel®—The Original Monkey Sock

**Location:** Osage, Iowa

**Founded:** 1900 in Appleton, Wisconsin; moved to Osage in 1971

**Employees:** About 200 (staffing fluctuates seasonally based on manufacturing demands)



### Mrs. Clark's Foods

**Overview:** Mrs. Clark's Foods has been an Iowa food manufacturer for more than 85 years. Products produced in the Iowa facility cover a wide range of categories that include shelf stable juice, mayonnaise, salad dressing, barbecue sauce, and marinades. With both branded and private label customers in retail and food service sectors, products are sold both domestically and internationally.

**Location:** Ankeny, Iowa

**Founded:** 1926

**Employees:** 150



### Quatro Composites

**Overview:** Quatro Composites focuses on engineering and manufacturing advanced composite structures for customers in the aerospace, medical, and industrial markets creating a product that is light, safer, and stronger.

**Location:** Orange City, Iowa (Development Center in Poway, California)

**Founded:** 2004 as Tec Industries

**Employees:** 185



# CIRAS Assists Iowa Lean Consortium in Reaching Iowa Manufacturers

*It was nearly five years ago when Teresa Hay McMahon and her colleagues first took action to bridge the Lean training and development gap.*

The group of professionals, representing industries across Iowa, formed the Iowa Lean Consortium (ILC) in 2009 out of a desire to help Lean practitioners improve their companies' processes and to speed Lean cultural development. McMahon and the others saw a shortage of what was available in Iowa and sought to go beyond basic training classes in Lean. They were searching for a way to bring new executives up to speed and to help Iowa Lean practitioners learn from each other.

Iowa Lean Consortium members now meet regularly for "learning opportunities" ranging from basic "Lean 101" simulations to more advanced training for event facilitators, such as a Kaizen training event scheduled for February 13 in Des Moines.

"The consortium is about practitioners sharing with each other and supporting each other. You can read all the books and understand the theories, but until you do it and have the hands-on experience, it's just not the same," says McMahon, the ILC board president. "Lean is a journey. You're constantly figuring out what works and what doesn't work. The ability to hear from a different practitioner's experience is really powerful."

The consortium now has 51 organization and 53 individual members from a variety of sectors that includes manufacturing, service, health care, government, and education.

CIRAS, which has supported the consortium from the beginning, participates on the ILC board and sponsors events. When the consortium first started, CIRAS hosted one of its events and helped bring in manufacturers and others who could

benefit from ILC efforts. In fact, the consortium's pilot event, on developing a Lean culture, received such a positive response that the group had to turn people away.

"CIRAS has helped us achieve a level of visibility in the manufacturing world in Iowa that we otherwise wouldn't have been able to achieve," McMahon says.

In recent years, CIRAS has sponsored and cohosted events on topics such as Lean turnaround, leadership in Lean culture, sustaining Lean efforts, and Lean product development. In the last two years, CIRAS also has sponsored the ILC Fall Conference, bringing in keynote speakers and offering different educational tracks and various training sessions for employees to learn about Lean topics that pertain to their company's situation.

"Our goal is to provide development opportunities for companies' employees and provide them access to national experts and networking opportunities with Lean professionals," says Jeff Mohr, CIRAS project manager.

Details are now under way for a CIRAS-sponsored, ILC event on April 8 featuring internationally recognized Lean expert Mike Hoseus, an adjunct

## AT A GLANCE

### Iowa Lean Consortium

**FOUNDED:** 2009

**WEBSITE:** [www.iowalean.org](http://www.iowalean.org)

**PHONE:** 515-259-0554 (voicemail only)

**IMPACT:** The ILC has gone from zero to 51 organization and 53 individual members in less than five years. Iowa Lean Consortium event satisfaction is rated at 8.3 on a 10-point scale. In 2012, the ILC hired a part-time employee to coordinate the consortium's activities and website.

**OVERVIEW:** The ILC's mission is to "drive improvements of time, cost, and quality through sharing experiences and hands-on activities designed to improve the ability of members to improve processes and accelerate Lean cultural development."

professor with the University of Kentucky's Center for Manufacturing and author of *Toyota Culture*.

In addition to the ILC's events, consortium members can access the group's online job board and shared events calendar. The ILC provides training materials from its events to all members.

Other consortium events for 2014 include two "Lean 101" simulations in March hosted by Pella Corporation and Des Moines Area Community College and a "Basic Lean Flow" simulation scheduled for June 24 in Cedar Rapids and hosted by Rockwell Collins.



The Iowa Lean Consortium (ILC) hosts many events, including this roundtable event, to help companies share their Lean journey experiences. CIRAS sponsors five ILC events each year.

➤ For more information visit [www.iowalean.org](http://www.iowalean.org).

# Internet Marketing Strategy Boot Camps Help Businesses Get Results

*Did you know that nearly 59 percent of business-to-business purchases start with a generic search on a site such as Google? That's why CIRAS offers Internet Marketing Strategy Boot Camps each year to help Iowa businesses understand and apply Internet marketing concepts and tools.*

Paul Gormley, CIRAS project manager, says Internet marketing is more than knowing how many hits your website gets. It involves seven key elements:

- website best practices
- search engine optimization (SEO)
- marketing message development
- social media marketing
- e-mail marketing
- strategic video development
- strategic use of analytics

Companies that develop and implement Internet marketing strategies are more likely to get and keep the attention of potential new customers and existing clients, Gormley adds.

Beginning in 2013, CIRAS began holding an intensive, three-day Internet Marketing Strategy Boot Camp to provide an in-depth, hands-on approach to helping companies. The boot camp is targeted at manufacturing business leaders, marketing professionals, and internal site developers whose role is to either create or implement a company's online vision.

The boot camp's interactive approach allows employees time to learn, practice, and apply Internet marketing strategy concepts and tools with guidance from experts. During the day, participants learn about and practice SEO, web analytics, social media marketing, and other topics. In the evening, participants receive one-on-one attention from experts to help develop their company's Internet

marketing strategy and/or to develop or modify the company's website.

Since taking a CIRAS Internet marketing class, John Nelson, sales manager at ESCP Corp. in Davenport, Iowa, says his website has produced not only bona fide leads, but actual sales, on a weekly basis. "I can count on leads and ultimately sales from those leads from my website now," he says.

Brian Evans, marketing manager at Henderson Products, Inc., in Manchester, Iowa, was looking to increase the company's visibility in search engines without participating in a pay-per-click advertising campaign. He attended two different CIRAS Internet marketing strategy events in 2011 and 2013.

"Without spending a penny on pay-per-click campaigns, our web traffic has increased 182 percent since first attending the CIRAS Internet Marketing Strategy Workshop," Evans says. "This was done by implementing roughly one-quarter of the suggested SEO best practices that were covered."

*"Without spending a penny on pay-per-click campaigns, our web traffic has increased 182 percent since first attending the CIRAS Internet Marketing Strategy Workshop."*

*— Brian Evans*

Evans also adds, "One of the most valuable and often overlooked parts of the workshop is the third and final day. That time has been dedicated to an in-depth analysis of your company's website. As a whole, this is by far the best value (in money and time spent) that you'll find anywhere when it comes to SEO."

Andy Zinkle, general manager of E. G. Staats & Co. of Mount Pleasant, Iowa,

## AT A GLANCE

### ESCP Corp.

**LOCATION:** Davenport, Iowa

**FOUNDED:** 1994

**EMPLOYEES:** 35

**OVERVIEW:** Woman-owned small business, custom metal fabrication manufacturer

### Henderson Products, Inc.

**LOCATION:** Manchester, Iowa

**FOUNDED:** 1944 (moved to Manchester in 1958)

**EMPLOYEES:** 320

**OVERVIEW:** Maker of snow- and ice-removal equipment for trucks

### E. G. Staats & Co., Inc.

**LOCATION:** Mount Pleasant, Iowa

**FOUNDED:** 1898

**EMPLOYEES:** 24

**OVERVIEW:** Provider of recognition awards, custom company clothing, and custom promotional products



recently attended a CIRAS Internet Marketing Strategy Boot Camp. "Our company was at the point where we needed some help with our search engine optimization, so I was heavily focused on that. But along the way, I also picked up some information about social media marketing for our business to help with our overall Internet marketing strategy," Zinkle says.

The next Internet Marketing Boot Camp is scheduled for April 29 through May 1, 2014, in Johnston, Iowa. For details and to register for this event, go to [bit.ly/1kCogVN](http://bit.ly/1kCogVN).

➤ For more information, contact Paul Gormley at 319-721-5357 or [gormley@iastate.edu](mailto:gormley@iastate.edu).



## Manufacturing in America: Perception vs. Reality

### *The Disconnect between Perception and Facts*

While manufacturing is filled with high-paying jobs, people aren't joining the field.

Over 70 percent of Americans view manufacturing as the most important industry for a strong economy and national defense, but only 30 percent of parents encourage their kids to enter manufacturing and only 17 percent of people view manufacturing as a top career choice.

### *The Reality*

- The annual average salary of manufacturing workers is more than \$77,000.
- Manufacturers have the highest job tenure in the private sector.
- 90 percent of manufacturing workers have medical benefits.
- 78 percent of manufacturing workers get retirement contributions from employers.

### *Why Is There a Problem?*

Manufacturing depends on a skilled workforce, but companies have jobs they can't fill. This has caused a skills gap.

- By 2030, 77 percent of skilled baby boomers will have left the workforce.
- The current workforce lacks the technical skills needed (industry certification or vocational training).

### *The Bottom Line*

Economic growth depends on manufacturing growth. The future of U.S. manufacturing relies on a skilled, talented workforce.

*Excerpts reprinted courtesy of NIST and MEP. To view the original infographic, visit <http://www.mfgday.com/sites/all/themes/drive/pdfs/mfgday-infographic.pdf>.*

## Iowa Vendor Conference Planned for April 16

Mark your calendars for Wednesday, April 16. That is the date for the first CIRAS-sponsored Iowa Vendor Conference. It will be held from 8 a.m. to 2 p.m. in Des Moines, Iowa.

"The goal of the conference is to help companies understand what government opportunities are available, network with potential customers and partners, and enhance their knowledge of doing business in the government sector," stated Pamela Russenberger, program director for the Procurement Technical Assistance Program.

The target audience includes personnel who are responsible for sales, marketing, and pursuing business in the government sector either directly or as a subcontractor.

Training sessions and presentations will include such topics as upcoming contract opportunities, social media, innovation, and more. Attendees will have the opportunity to network one on one with city, county, state, and federal government officials, as well as with prime contractors looking for well-qualified small business suppliers.

"We want this to become an annual event that allows companies to expand their network and discover new opportunities in the government sector," Russenberger says.

**For more information, contact Pamela Russenberger at 515-509-7814 or [plrussen@iastate.edu](mailto:plrussen@iastate.edu).**

### ■ Dubuque Area Chamber of Commerce Small Business/Big Impact Conference

February 27, 2014  
7:45 a.m.–5:00 p.m.  
Dubuque, Iowa

### ■ Iowa Partnerships and Networking Event—Construction

February 27, 2014  
9:00 a.m.–12:00 p.m.  
Dubuque, Iowa

### ■ ABI Local Leaders Forum

March 6, 2014  
1:00 p.m.–4:00 p.m.  
Marshalltown, Iowa

### ■ Renew Rural Iowa: The Journey To Your Vision

March 11, 2014  
8:00 a.m.–3:30 p.m.  
West Des Moines, Iowa

### ■ How to Build Leadership for Next Generation Lean (Mike Hoseus)

Co-hosted by Iowa Lean Consortium and CIRAS  
April 8–10, 2014  
8:00 a.m.–5:00 p.m.  
Location TBD

### ■ Iowa Vendor Conference

April 16, 2014  
9:00 a.m.–2:00 p.m.  
Des Moines, Iowa

### ■ Internet Marketing Strategy Boot Camp

April 29–May 1, 2014  
9:30 a.m.–4:00 p.m.  
Johnston, Iowa

**For details, see the events section of the CIRAS website, [www.ciras.iastate.edu](http://www.ciras.iastate.edu).**





Since 1963, we have been improving the profitability of businesses. We partner with companies and communities to help them prosper and grow. A typical partner achieves a 2,000 percent return on its investment—an astonishing \$20 of impact for every \$1 invested. A vast network of university and industry experts brings years of professional experience to CIRAS, making us a leading integrator of solutions in Iowa, contributing more than \$1.8 billion of reported impact during the past five years.

				Account Manager	Economic Development	Engineering	Government Contracting	Innovation	Management Practices	Productivity	Quality Management	Safety	Supply Chain Management	Sustainability	CIRAS Operations
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 College of Engineering  
 Department of Environmental Health and Safety  
 Engineering Career Services

Engineering-LAS Online Learning  
 Industrial Assessment Center  
 Institute for Physical Research and Technology  
 Meat Science Extension

Des Moines Area Community College  
 Iowa Area Development Group  
 Iowa Association of Business and Industry  
 Iowa Business Council  
 Iowa Central Community College  
 Iowa Farm Bureau Federation  
 North Iowa Area Community College



## THE INNOVATION CYCLE

# Leveraging the Innovation Cycle: Development *by Chris Hill*

*For an idea to become an innovation, it must pass through the four phases of the innovation cycle: Definition, Discovery, Development, and Delivery. In this article, the third of those four phases, Development, is discussed.*

In the Development phase, we take valued concepts and turn them into design solutions ready for delivery to customers. Keys to success include understanding objectives, actions, resources, timing, and communication needs. Businesses that aren't achieving their desired results in product development frequently seek out new systems or tools to solve their problems, when the best answer is usually to get back to the basics. We recommend that the first step in the Development phase be planning, including defining deliverables, resources needed, and key stakeholders. A project leader is assigned, with support from leadership, as well as a cross-functional team to ensure key areas have a stake in the project and some accountability for its outcome. This team should then discuss with key stakeholders the desired scope, desired timing, and desired deliverables in order to formulate a proposed project plan after working with various resource areas.

The proposed plan should include key activities, required resources, estimated durations, and sequence relationship

between the activities. Key activities include the use of fundamental development tools—finite element analyses (FEAs), failure mode and effects analyses (FMEAs), prototype plans, test plans, quality plans, manufacturing plans, supply base plans, and sales and marketing plans, just to mention a few. The proposed plan is then reviewed with key stakeholders, and, once finalized, this plan should be reviewed throughout the project's duration with these stakeholders. These ongoing reviews allow for discussions on progress, issues, and risk assessment. The project team should use this plan to drive their activities as they keep focused on the critical path.

When a project is started, there is a natural desire to jump right into it to demonstrate progress. Research shows that investing the time up front to develop an effective plan with stakeholder buy-in, coupled with project reviews, will improve your performance in delivering innovations.

We can help you establish the foundation to build on for successful development projects. If you would like further information on how CIRAS can help you become more innovative, please contact CIRAS at 515-294-3420.

**To participate in the innovation discussion, join our LinkedIn group at [linkd.in/12tVLy1](https://www.linkedin.com/company/ciras-iastate).**